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When Is TAVR in Patients With Severe Aortic Stenosis Deemed Extreme Risk for Surgery Appropriate?



Aortic stenosis is the most common valve disease and is expected to rise because of an increase in life expectancy. Although physicians have learned how to care for critically ill old patients and enable many to survive major surgical procedures, operating on patients at very high risk is often not appropriate or technically feasible.

Given these considerations, we read with much interest the recent paper and editorial by Yakubov et al. (1) and Pilgrim and Windecker (2), respectively, in the *Journal* evaluating the 2-year outcomes after transfemoral self-expanding transcatheter aortic valve replacement in 489 extreme-risk patients. They found that the rate of all-cause mortality or major stroke was 39% at 2 years. The rates of all-cause mortality, cardiovascular mortality, and major stroke were 36.6%, 26.2%, and 5.1 %, respectively, at 2 years. The multivariable predictors of all-cause mortality at 2 years included the presence of coronary artery disease and admission from an assisted living facility. In addition, at 2 years, 94% of patients had New York Heart Association functional class I to II

symptoms. A benefit of this size is remarkable given the extreme-risk patient population that has been included.

However, it is concerning that 42% of patients who died between year 1 and year 2 did so from non-cardiovascular causes. Additionally, in a separate study looking at health status in the CoreValve Extreme Risk Group, the proportion of patients with a poor outcome was 39% at 6 months (22% death, 16% very poor quality of life, and 1.4% quality-of-life decline). In similar studies looking at 5-year outcomes for the inoperable group of the PARTNER IB trial (Placement of Aortic Transcatheter Valve Trial), 48% had multiple readmissions in the first year (readmission rates were not reported in this study) (3). These observations suggest that frail elderly patients often have competing risks contributing to their all-cause mortality. To treat one disease process, only for another to take its place, should not be the objective of an invasive expensive treatment with complications. The total life expectancy now surpasses the extra years of life lived in good health in high-income nations, and this difference continues to widen (4). This aging population of patients with more comorbidities may be at risk for overtreatment. Now that the safety and efficacy of transcatheter aortic valve replacement is established, the current research efforts have to reorient to appropriate patient selection.

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